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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,463	01/22/2004	Atsushi Kanamori	1248-0697P	4010
2292	7590	05/16/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			RILEY, SHAWN	
			ART UNIT	PAPER NUMBER

2838

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/761,463	<b>Applicant(s)</b> KANAMORI ET AL.	
	<b>Examiner</b> Shawn Riley	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on jan 2004 filing.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 14 is/are rejected.
- 7) ☒ Claim(s) 2-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>jan 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Specification***

1. The disclosure is objected to because of the following informalities: The summary of the invention, at pages 5 first full paragraph through first full paragraph on page 12 should not be written in the grammar and language of the claims and in extensive detail as already addressed in the claims. It is recognized that Applicant's wish to provide a basis of matter in the specification to avoid, *inter alia*, a new matter rejection. However, once recited (i.e., when first filed) in the original application's claims, a first paragraph U.S.C. 112 rejection based on lack of written description (or enablement or best mode for that matter) would not be proper. The written description is not the place to introduce the legal phraseology of the claims. The specification (other than the claims) should be written so that the average person who is skilled in the art (not in legal nuances) would be aided by reading the information.

More particularly, since the purpose of the brief summary of invention is to apprise the public, and more especially those interested in the particular art to which the invention relates, of the nature of the invention, the summary should be directed to the specific invention being claimed, in contradistinction to mere generalities which would be equally applicable to numerous preceding patents. That is, the subject matter of the invention should be described in one or more clear, concise sentences or paragraphs.

The brief summary, if properly written to set out the exact nature, operation, and purpose of the invention, will be of material assistance in aiding ready understanding of the patent in future searches. The brief summary should be more than a mere statement of the objects of the invention, which statement is also permissible under 37 CFR 1.73.

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Appropriate correction is required.

Further, a brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. Such summary should, when set forth, be commensurate with the invention as claimed and any object recited should be that of the invention as claimed. Since the purpose of the brief summary of invention is to apprise the public, and more especially those interested in the particular art to which the invention relates, of the nature of the invention, the summary should be directed to the *specific invention* being claimed, in *contradistinction to mere generalities* which would be equally applicable to numerous preceding patents. That is, the subject matter of the invention should be described in one or more clear, concise sentences or paragraphs. Stereotyped general statements that would fit one case as well as another serve no useful purpose and may well be required to be canceled as surplusage, and, in the absence of any illuminating statement, replaced by statements that are directly in point as applicable exclusively to the case in hand. Appropriate correction is required.

2. Applicant(s) is(are) reminded of the proper content of an abstract of the disclosure.

The abstract should not refer to purported merits ( Thus, it is possible to **reduce power consumption** ....., thereby **improving power source conversion efficiency**. As a result, it is possible to realize a switching power source circuit whose power source conversion **efficiency is high**) or speculative applications of the invention and should not compare the invention with the

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prior art (**compared with a case where the OFF drive circuit continues to operate during the inactive period**). Correction is required.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. E.g., Switching Regulator with independent on and off Switch control.

***Claim Rejections - 35 U.S.C. § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 14 are rejected under 35 U.S.C. §102(b) as being fully anticipated by Borghi et al (U.S. Patent 5,617,016). Borghi et al shows, (in, e.g., the(ir) figure 5 and corresponding disclosure)

As to claim 1;

A switching power source circuit, comprising: an ON drive circuit (see, e.g., T<sub>ON</sub> CONTROL) for generating an ON drive current (SET) which causes a switching element to be turned ON; an OFF drive circuit (T<sub>OFF</sub> CONTROL) for generating an OFF drive current which causes the switching element to be turned OFF; control means for controlling both

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the ON drive circuit and OFF drive circuit (e.g., LATCH 530) so as to adjust a duty ratio of the switching element so that an output voltage has a predetermined value; and OFF drive control means (CLOCK and DIVIDER) for causing the off drive circuit to begin operating at the same time as an off period of the switching element begins, and for causing the off drive circuit to stop operating before the off period of the switching element ends (while the clock changes RIFFER causes the output of  $TOFF\ CONTROL$  to be off/stop-operating before the end of the off period/cycle, see, e.g., column 5 lines 45-64).

As to claim 14 (see rejection of claim 1);

An electronic device, comprising a switching power source circuit, wherein the switching power source circuit includes: an ON drive circuit for generating an ON drive current which causes a switching element to be turned ON; an OFF drive circuit for generating an OFF drive current which causes the switching element to be turned OFF; control means for controlling both the ON drive circuit and OFF drive circuit so as to adjust a duty ratio of the switching element so that an output voltage has a predetermined value; and OFF drive control means for causing the OFF drive circuit to begin operating at the same time as an OFF period of the switching element begins, and for causing the OFF drive circuit to stop operating before the OFF period of the switching element ends.

***Allowable Subject Matter***

3. Claims 2-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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4. As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 C.F.R. § 1.111(b) and section 707.07(a) of the M.P.E.P.

5. The following is an examiner's statement of reasons for allowance: No prior art uncovered anticipates or renders obvious applicant(s) claimed switching power source circuit including a current which is interrelated with a current outputted by the constant current source, so as to supply thus generated current to a control terminal of the switching element, or so as to draw thus generated current from the control terminal; and stopping means for causing the constant current source to stop outputting the current while the OFF drive control means instructs the OFF drive circuit to stop operating.

Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power source circuit including a current mirror circuit for outputting a current which is interrelated with a current outputted by the constant current source; current amplifying means for amplifying, as the OFF drive current, the current outputted by the current mirror circuit, so as to supply thus amplified current to a control terminal of the switching element, or so as to draw thus amplified current from the control terminal; and stopping means for causing the constant current source to stop outputting the current while the OFF drive controlling means instructs the OFF drive circuit to stop operating.

Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power source circuit including the OFF drive controlling means outputs a duty limit signal for

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determining an upper limit of the duty ratio of the switching element to the control circuit, and the duty limit signal is set so that the OFF period of the switching element is longer than an operational period of the OFF drive circuit in a case where the duty ratio has an upper limit value.

### *Conclusion*

Any inquiry from other than the applicant/attorney of record concerning this communication or earlier communications from the Examiner should be directed to the Patent Electronic Business Center (EBC) at 1.866.217.9197. Any inquiry from a member of the press concerning this communication or earlier communications from the Examiner or the application should be directed to the Office of Public Affairs at 703.305.8341. Any inquiry from the applicant or an attorney of record concerning this communication or earlier communications from the Examiner should be directed to Examiner Riley whose telephone number is 571.272.2083. The Examiner can normally be reached Monday through Thursday from 7:30-6:00 p.m. Eastern Standard Time. The Examiner's Supervisor is Mike Sherry who can be reached at 571.272.2084. Any inquiry about a case's location, retrieval of a case, or receipt of an amendment into a case or information regarding sent correspondence to a case **should be directed to 2800's Customer Service Center** at 571.272.2815. Any papers to be sent by fax MUST BE sent to fax number 703.872.9306. Any inquiry of a general nature of this application should be **directed to the Group receptionist** whose telephone number is 571.272.2800. Status information of cases may be found at <http://pair-direct.uspto.gov> wherein unpublished application information is found through private PAIR and published application information is found through public PAIR. Further help on using the PAIR system is available at 1.866.217.9197 (Electronic Business Center).

May 05



*Shawn Riley*  
*Primary Examiner*